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EXAMINER

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**BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES**

Application Number: 09/609,046
Filing Date: June 30, 2000
Appellant(s): TYRRELL ET AL.

Charles S. Fish
Reg. No. 35,870
For Appellant

EXAMINER'S ANSWER

This is in response to the appeal brief filed 10/24/07 appealing from the Office action mailed 1/26/07.

(1) Real Party in Interest

A statement identifying by name the real party in interest is contained in the brief.

(2) Related Appeals and Interferences

The examiner is not aware of any related appeals, interferences, or judicial proceedings which will directly affect or be directly affected by or have a bearing on the Board's decision in the pending appeal.

(3) Status of Claims

The statement of the status of claims contained in the brief is correct.

(4) Status of Amendments After Final

The appellant's statement of the status of amendments after final rejection contained in the brief is correct.

(5) Summary of Claimed Subject Matter

The summary of claimed subject matter contained in the brief is correct.

(6) Grounds of Rejection to be Reviewed on Appeal

The appellant's statement of the grounds of rejection to be reviewed on appeal is correct.

(7) Claims Appendix

The copy of the appealed claims contained in the Appendix to the brief is correct.

(8) Evidence Relied Upon

Cajolet	US 6,192,388	Feb. 20, 2001 (filed Jun. 20, 1996)
Hancock, Feb. 14, 1997, "Distributed Parallel Volume Rendering on Shared Memory Systems"		

(9) Grounds of Rejection

The following ground(s) of rejection are applicable to the appealed claims:

Claims 1-29 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.

With regard to claim 1, the limitation "providing one or more samples of the rendered first and second frames....prior to completion of rendering the first or second frame by the first and second servers" is not described in the specification. The only reference to providing samples that the Examiner can locate in the specification appears at page 34, lines 1-7. However, this section only describes a remote site providing a sample of a render job prior to completion of the entire job. The claims, as

amended, recite providing samples of individual frames that are portions of the entire render job (lines 2-4). Providing a sample of a render job in progress is not the same as and does not provide support for providing samples of individual frames from the render job. Furthermore, it should be noted that receiving samples from a remote site, as described in the specification, is different from and does not provide support for receiving samples from an individual render server at that remote site. Independent claims 8, 14, and 21 contain substantially identical limitations and are rejected under the same rationale.

All claims not individually rejected are rejected by virtue of their dependency from the above claims.

Claims 1-29 rejected under 35 U.S.C. 103(a) as being unpatentable over Cajolet (US Patent 6,192,388) in view of Hancock ("Distributed Parallel Volume Rendering on Shared Memory Systems").

Regarding claim 1, Cajolet shows steps for:

receiving from a client a render job having an associated job profile (graphics program) and a plurality of frames in an animation sequence (col. 5 line 54- col. 6 line 4);

distributing via a communications medium (62) a first frame of the animation sequence to a first one of a plurality of render servers (86) and the second frame of the animation sequence to a second one of the plurality of render servers based at least in

part on the job profile; the first and second frames being different (col. 6 lines 2-8, 28-45, col. 7 lines 48-52);

rendering the first and second frames concurrently at the first and second render servers (col. 6 lines 4-8, 40-45, col. 10 lines 18-25); and

forwarding the rendered first and second frames to a network storage system for retrieval by the client (Col 10, Lines 37-40);

providing one or more samples of the rendered frames for the render job to the client prior to completion of the render job by the first and second servers (Col 10, Lines 34-40); and

receiving an input from the client in response to the one or more samples (assigns a new portion of the render job to the available assisting computer)(at least Col 10, Lines 40-47).

Cajolet fails to specifically disclose providing samples of the frames prior to completion of rendering the frame. Hancock discloses a similar system for distributed rendering and teaches providing samples of an image prior to completion of rendering the image (at least Section 2.1; Section 3, "Refinement"; and Fig 8). This would have been an advantageous addition to the system disclosed by Cajolet since it would have allowed the user to quickly get a preview of a frame in progress.

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to provide the client with a sample of a frame prior to completion of its rendering in order to provide the client with an preview of a frame in progress.

Regarding claim 2, Cajolet shows that receiving from a client the render job comprises receiving the render job from a computer remote from the plurality of render servers (computers may be connected via a WAN) (Col 6, Lines 16-17).

Regarding claim 3, Cajolet shows distributing the first and second frames comprises distributing the first and second frames by a scheduler (88), the scheduler operable determine which of the plurality of render servers are capable of rendering the first and second frames (col. 6 lines 46-55, col. 10 lines 18-25).

Regarding claim 4, Cajolet shows the scheduler is operable to determine which of the plurality of render servers are capable of rendering the first and second frames by accessing a database storing the capabilities each of the plurality of render servers (col. 8 lines 38-53).

Regarding claim 5, Cajolet shows the capabilities database stores the type of rendering package associated with each of the plurality of render servers (computational characteristics, user profile, col. 8 lines 43-53).

Regarding claim 6, Cajolet shows capabilities database stores a processing status for each of the plurality of the render servers (col. 9 lines 53-56).

Regarding claim 7, Cajolet shows further comprising transmitting the rendered first and second frames to the client (col. 10 lines 34-40).

Regarding claim 8, Cajolet shows:

a resource database (51) comprising resource information regarding a plurality of render servers (col. 8 lines 38-54); and

a schedule server (88) coupled the plurality of render servers via a communications medium, the schedule server operable to receive a render job from a client, the render job having an associated job profile and a plurality of image frames in a sequence (Col 5, Line 54 to Col 6, Line 8);

the schedule server operable to distribute a first frame of the sequence to a first one of a plurality of render servers based on a comparison of the job profile and the resource information (col. 6 lines 2-8, 28-45, col. 7 lines 48-52), the schedule server operable to provide one or more samples of the rendered first frame received from the first one of the plurality of render servers for the render job to the client prior to completion of the render job by the first one of the plurality of render servers (frames/portions are received and stored as they are received)(Col 10, Lines 34-40); and

the schedule server operable to receive an input from the client in response to the one or more samples (assigns a new portion of the render job to the available assisting computer)(at least Col 10, Lines 40-47).

Cajolet fails to specifically disclose providing a sample of the frame prior to completion of rendering the frame. Hancock discloses a similar system for distributed rendering and teaches providing samples of an image prior to completion of rendering the image (at least Section 2.1; Section 3, "Refinement"; and Fig 8). This would have been an advantageous addition to the system disclosed by Cajole since it would have allowed the user to quickly get a preview of a frame in progress.

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to provide the client with a sample of a frame prior to completion of its rendering in order to provide the client with an preview of a frame in progress.

Regarding claim 9, Cajole shows the resource information comprises the type of rendering package associated with each of the plurality of render servers (computational characteristics, user profile, col. 8 lines 43-53).

Regarding claim 10, Cajole shows the resource information comprises a processing status for each of the plurality of the render servers (col. 9 lines 53-56).

Regarding claim 11, Cajole shows schedule server is operable to determine whether a particular one of the render servers is capable of rendering a particular render job (col. 10 lines 18-25).

Regarding claim 12, Cajolet shows resource database further comprises resource information regarding a plurality of render hosts associated with respective ones of the render servers (col. 8 lines 43-53).

Regarding claim 13, Cajolet shows resource information comprises hardware configuration information regarding the render hosts (col. 8 lines 43-53).

Regarding claim 14, Cajolet shows steps for:

a local rendering system operable to receive from a client a render job having a plurality frames in an animation sequence (col. 5 lines 54- col. 6 line 4); and

at least one remote rendering system comprising a plurality of remote render servers (fig. 3, col. 6 lines 11-17) and operable to:

receive from the local rendering system the render job; distribute a first frame of the sequence to a first one of the plurality of remote render servers and a second frame of the sequence to a second one of the plurality of remote render servers the first and second frames being different (col. 6 lines 2-8, 28-45, col. 7 lines 48-52)

render the first and second frames concurrently at the first and second remote render servers (col. 6 lines 4-8, 40-45, col. 10 lines 18-25); and

return a result of the render job to the local rendering system (col. 10 lines 34-37);

wherein the remote rendering system is operable to provide one or more samples of the rendered first or second frames for the render job to the local rendering system prior

to completion of the render job by the remote rendering system (Col 10, Lines 34-40);
and

wherein the remote rendering system is operable to receive an input from the client in response to the one or more samples (client assigns a new portion of the render job to the available assisting computer)(at least Col 10, Lines 40-47).

Cajolet fails to specifically disclose providing samples of the frames prior to completion of rendering the frame. Hancock discloses a similar system for distributed rendering and teaches providing samples of an image prior to completion of rendering the image (at least Section 2.1; Section 3, "Refinement"; and Fig 8). This would have been an advantageous addition to the system disclosed by Cajolet since it would have allowed the user to quickly get a preview of a frame in progress.

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to provide the client with a sample of a frame prior to completion of its rendering in order to provide the client with an preview of a frame in progress.

Regarding claim 15, Cajolet shows:

a plurality of render servers operable to render a render job having an associated job profile (graphics program, col. 6 lines 34);

a resource database comprising resource information regarding the plurality of render servers (col. 8 lines 43-53); and

a schedule server (88- program dispatcher) coupled to the render server via a communications medium and operable to distribute the render job to one or more of a plurality of render servers based on a comparison of the job profile and the resource information (col. 6 lines 3-8).

Regarding claim 16, Cajolet shows:

a resource database comprising resource information regarding the plurality of render servers (col. 8 lines 43-53); and

a schedule server (88) coupled to the remote render servers via a communications medium and operable distribute the render job to at least the first and second remote render servers based on a comparison of the job profile and the resource information (col. 6 3-8, col. 10 18-25).

Regarding claim 17, Cajolet shows the resource information comprising the type of rendering package associated with each of the plurality of remote render servers (computation characteristics, col. 8 lines 43-53).

Regarding claim 18, Cajolet shows the resource information comprises a processing status for each of the plurality of remote render servers (col. 9 lines 53-56).

Regarding claim 19, Cajolet shows the schedule server is operable to determine whether a particular one of the remote render servers capable of rendering a particular render job (col. 8 lines 38-53).

Regarding claim 20, Cajolet shows the resource database further comprises resource information regarding a plurality of render hosts associated with respective ones of the remote render servers (col. 8 lines 43-53).

Regarding claim 21, Cajolet shows:

receiving a render job having a plurality of frames in an animation sequence from a client at a first rendering site (66, 88, col. 5 lines 54- col. 6 line 4);

transferring the render job from the first rendering site to a second rendering site (80), the second rendering site located remote from the first rendering site and comprising a plurality of remote render servers (fig. 3, col. 6 lines 9-60);

distributing a first frame of the sequence to a first one of the plurality of remote render servers and a second frame of the sequence to a second one of the plurality of remote render servers, wherein the first and second frames are different (col. 6 lines 2-8);

rendering the first and second frames concurrently at the first and second remote render servers (col. 6 lines 4-8, 40-45, col. 10 lines 18-25);

providing one or more samples of the rendered frames for the render job to the client prior to completion of the render job by the first and second remote servers (Col 10, lines 34-40); and

receiving an input from the client in response to the one or more samples (assigns a new portion of the render job to the available assisting computer)(at least Col 10, Lines 40-47).

Cajolet fails to specifically disclose providing samples of the frames prior to completion of rendering the frame. Hancock discloses a similar system for distributed rendering and teaches providing samples of an image prior to completion of rendering the image (at least Section 2.1; Section 3, "Refinement"; and Fig 8). This would have been an advantageous addition to the system disclosed by Cajole since it would have allowed the user to quickly get a preview of a frame in progress.

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to provide the client with a sample of a frame prior to completion of its rendering in order to provide the client with an preview of a frame in progress.

Regarding claim 22, Cajole shows transmitting the rendered first and second frames to the client (col. 10 lines 34-40).

Regarding claim 23, Cajole shows transmitting the rendered first and second frames from the second render site to the first render site (col. 10 lines 34-40).

Regarding claim 24, Cajolet shows storing the rendered first and second frames in a location accessible by the client (col. 10 lines 34-40).

Regarding claim 25, Cajolet shows the first rendering site comprises: a plurality of render servers operable to render a render job having an associated job profile (fig. 3);

a resource database comprising resource information regarding the plurality of render servers (col. 8 lines 38-53); and

a schedule server coupled the render server via a communications medium and operable to distribute the render job to one or more of a plurality of render servers based on a comparison of the job profile and the resource information (col. 6 lines 46-60).

Regarding claim 26, Cajolet shows a resource database comprising resource information regarding the plurality of render servers (col. 8 lines 38-53); and

a schedule server coupled to the remote render servers via a communications medium and operable distribute the render job to at least the first and second remote render servers based on a comparison of the job profile and the resource information (col. 6 lines 46-60).

Regarding claim 27, Cajolet shows files associated with the render job from the first site to the second site, the associated files being necessary to render the render job (col. 9 lines 1-4).

Regarding claim 28, Cajolet shows the associated files comprise a texture file (col. 5 lines 60-66).

Regarding claim 29, Cajolet shows notifying, by the second rendering site, the first rendering site when the render job has been rendered (col. 10 lines 34-37).

(10) Response to Argument

Regarding claims 1-29, of which claims 1, 8, 14 and 21 are independent, Appellants only present arguments to these claims collectively, and present no separate arguments to any specific claim encompassed by this rejection. Accordingly, the Examiner will address claim 1 as representative of all claims on appeal.

A summary of the various points raised by Appellants are presented below, and each point is addressed individually by the Examiner:

Regarding claims 1, Appellants present five principal arguments:

a) The language of claims 1-29 is described in Appellants' specification, particularly at: p. 9, ll. 19-29, p. 11, ll. 9-18 and p. 34, ll. 1-7 (Br. 10).

b) "[T]here is no objective reason provided by the Examiner to combine the Cajolet patent and the Hancock paper" (Br. 11), and the Examiner has used the language of the claims in a hindsight attempt to support the combination (Br. 11).

c) "[A] reasonable expectation of success has not been shown by the Examiner" since "[t]he proposed combination attempts to change the principle of operation of the Cajolet patent" (Br. 12).

d) Cajolet fails to disclose that the "assisting computer provides samples of rendered frames prior to completing its portion of the render job" (Br. 13).

e) Hancock "is not capable of receiving an input from the client in response to the one or more samples" (Br. 14).

Regarding argument a) that the language of claims 1-29 is described in Appellants' specification, the Examiner respectfully disagrees. The first portion of the specification cited by Appellants, p. 9, ll. 19-29, merely describes the client submitting a render job containing several frames that are distributed to several hosts. The second portion of the specification cited by Appellants, p. 11, ll. 9-18, merely describes the schedule server, stating that it receives frames and distributes them to render servers. Nothing in either of these sections even mentions providing samples to the client.

The third section cited by Appellants, p. 34, ll. 1-7, is the only portion of the specification that describes providing samples to a client. However, this section merely states that "samples of the rendered job" may be sent to the client from a remote site. Relying on this single sentence, Appellants assert that "[s]ince a frame is part of a

render job, a sample of a rendered frame may be provided to the client from one render server prior to completion of a rendered frame from another server" (Br. 10). However, it is clear that the disclosure is far more vague than this, and simply does not describe providing samples of individual frames. It is noted that Appellants have not argued that providing samples of an individual frame, contained within a render job, would have been an obvious variation of providing samples of "a rendered job". The vague and general language of Appellants' specification fails to adequately support the specific claim language of the independent claims.

Additionally, it is noted that Appellants' rationale that "a sample of a rendered frame may be provided to the client from one render server prior to completion of a rendered frame from another server" (Br. 10) is inconsistent with the language of the claims. For example, claim 1 requires "providing one or more samples of the rendered first or second frames ... prior to completion of rendering the first or second frame and second servers". This limitation requires providing the sample(s) prior to completion of rendering either frame, and is not consistent with a system that provides a sample of one frame prior to completion of rendering a second frame at a second location.

Throughout prosecution, Appellants have merely argued that "since a frame is part of a render job, a sample of a render frame may be provided to the client" (See e.g., Pre-Brief Conference Request, p. 2; Remarks filed 4/26/07, p. 11). Appellants have conveniently attempted to argue a new construction of this claim language in the Brief, and one that is inconsistent with its plain meaning. Nonetheless, regardless of the construction of this claim limitation, Appellants' specification fails to describe providing

samples of individual frames at any time, either prior to completion of the sampled frame or prior to completion of a second frame being rendered at a different location.

Regarding argument b) that there is no objective reason provided by the Examiner to combine the Cajolet patent and the Hancock paper and that the Examiner has used the language of the claims in a hindsight attempt to support the combination, the Examiner respectfully disagrees. An objective reason for combining Cajolet and Hancock was explicitly set forth in the rejection of each claim. For example, with regard to claim 1 the Examiner stated that “[Hancock’s teachings] would have been an advantageous addition to the system disclosed by Cajolet since it would have allowed the user to quickly get a preview of a frame in progress”. This speedy generation of image previews is a major goal of Hancock, since it allows the user to rapidly evaluate the images (Hancock, §2.1).

Regarding argument c) that a reasonable expectation of success has not been shown by the Examiner, it is noted that the Examiner is not required to demonstrate a reasonable expectation of success, so long as it is present. Evidence showing there was no reasonable expectation of success may support a conclusion of nonobviousness. *In re Rinehart*, 531 F.2d 1048, 189 USPQ 143 (CCPA 1976). However, Appellants have not provided any such evidence. In this case, there would have been a reasonable expectation of success in combining the teachings of Hancock

with Cajolet. The only modification to Cajolet would be to provide the client with samples of frames currently being rendered.

Appellants assert that "[i]f only samples are provided, the problem dispatcher would think that the samples are complete rendered images and store them as such" (Br. 13). First, the combination of Cajolet and Hancock would not provide "only samples". It would provide one or more samples while rendering is ongoing, and then provide the completed image at the end. The test for obviousness is not whether the features of a secondary reference may be bodily incorporated into the structure of the primary reference; nor is it that the claimed invention must be expressly suggested in any one or all of the references. Rather, the test is what the combined teachings of the references would have suggested to those of ordinary skill in the art. See *In re Keller*, 642 F.2d 413, 208 USPQ 871 (CCPA 1981). In this case, one of ordinary skill in the art, when combining the teachings of Cajolet and Hancock, would have known to make the necessary modifications to ensure that samples are interpreted as samples and completed images interpreted as completed images.

Regarding argument d) that Cajolet fails to disclose that the assisting computer provides samples of rendered frames prior to completing its portion of the render job, it is noted that the rejection was based on the combination of Cajolet and Hancock, and Hancock was relied upon for teaching this limitation, Which it clearly does (Hancock; §2.1, & 3). One cannot show nonobviousness by attacking references individually where the rejections are based on combinations of references. See *In re Keller*, 642 F.2d 413,

208 USPQ 871 (CCPA 1981); *In re Merck & Co.*, 800 F.2d 1091, 231 USPQ 375 (Fed. Cir. 1986).

Regarding argument e) that Hancock is not capable of receiving an input from the client in response to the one or more samples, it is again noted that the rejection was based on the combination of Cajolet and Hancock, which when combined, teach this limitation. Cajolet describes the system substantially as claimed, including receiving input from the client in response to receipt of images (col. 10, ll. 40-47). Hancock teaches providing a client with samples of an image prior to completion of rendering the image (§2.1 & 3). When considered in combination, Cajolet and Hancock teach providing samples of an image being rendered to a client, and receiving input from the client, in response to the samples, indicating whether any more rendering needs to be done.

In summary, Appellants have attempted to rely on a single vague and general statement in the specification to provide written description support for a very specific claim limitation, and argued the proposed combination of Cajolet and Hancock in a piecemeal fashion, failing to consider the combined teachings of the references and what they would have suggested to one of ordinary skill in the art. The combined disclosure of these references teach all limitations present in Appellants' claims, which amount to nothing more than the combination of prior art elements, using known methods, to achieve a predictable result.

(11) Related Proceeding(s) Appendix

No decision rendered by a court or the Board is identified by the examiner in the Related Appeals and Interferences section of this examiner's answer.

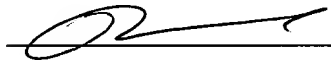
For the above reasons, it is believed that the rejections should be sustained.

Respectfully submitted,

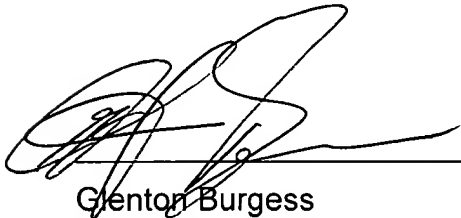
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